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EXAMINER	
RAHIM, AZIM	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/574,656	LEE ET AL.	
	Examiner	Art Unit	
	AZIM RAHIM	3784	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *23 December 2010*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,4-20,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,4-20,24 and 25* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *04 April 2006* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in Graham **v.** John Deere Co., 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1 and 4-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko (US 6,286,326) in view of Kim et al. (Kim, US 5,987,904), Chung (US 5,156,015) and Reed (US 2,191,774).

Regarding claims 1 and 7, Kopko discloses a refrigerator arrangement (referring to figure 2) comprising: a duct (59) in fluid communication with a freezer compartment (55) and a fresh-food compartment (56) via flaps (53, 54, 57, and 58) disposed adjacent to both of said compartments (illustrated in figure 2); wherein the duct includes an evaporator/refrigerant pipe assembly (52) and reversing fan (51) capable of moving air in two directions, thus opening and closing a first set of flaps (53 and 54) when the fan moves air in one direction and closing the

first set of flaps when the fan moves air in another direction opposite the first direction (see column 4, lines 23-40; the fan blows air to the right and to the left, depending on the direction of rotation of the fan). Also, Kopko further discloses that if the fan blows air away from the evaporator, flaps 53 of the freezer compartment will close off the freezer compartment to the space, and the space will be closed off to the freezer compartment (see column 4, lines 23-40). It is noted that the operation of the reversing fan is indicative that some type of driving means (i.e. a motor) controls the rotation of the fan. Also, it is noted that the recitations "so that the opening or closing between the space and the refrigerating chamber and the space and the freezing chamber are performed by the open/close device," "so that the cold air is directed into the refrigerating chamber and /or the freezing chamber during cooling," and "so that a heat transmission from the defrosting heater to the refrigerating chamber and/or freezing chamber is prevented during defrosting by an operation of the defrosting heater" are merely statements of intended use and lends no additional structure to the claimed invention, and the applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here. However, Kopko fail to disclose a defrost heater positioned within the duct; that both the first and second open/close devices open the space to both the refrigerator and freezer compartment when the fan rotates in one direction and both the first and second open/close devices closes the space when the fan is rotated in the opposite direction; and a supporting plate having a plurality of openings, a plurality of rotating plates, each having one side coupled to the supporting plate by hinges, and the other side being rotatable upward by a predetermined angle, wherein each of the plurality of rotating plates is

independently coupled to the supporting plate without a connection to others of the plurality of rotating plates. Kim teaches a refrigerator (referring to figure 3) that includes an evaporator (11), a fan (15), and a defrost heater (17) disposed within a duct (illustrated in figure 3), wherein the defrost heater is selectively operated in a defrost operation (see column 1, lines 55-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko to include the defrost heater as taught by Kim in order to prevent excess frost buildup on the evaporator, thus preventing the reduction in cooling efficiency due to the frost buildup. The general concept of designing a refrigerator to have a freezer compartment disposed above a refrigerator compartment and having airflow that flows from a space to both the refrigerator compartment and freezer compartment in series falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Chung which teaches a refrigerator (referring to figure 1) having a freezer compartment (2) disposed above a refrigerator compartment (3) and having airflow (see arrows) that flows from a space (5) to both the refrigerator compartment and freezer compartment in series (illustrated in figure 1: via port 7), and one having ordinary skill in the art would have been motivated to include the use of a refrigerator of this configuration in order to make the refrigerator portable and fit in confined spaces. Conceptually, is noted that given the refrigerator arrangement of Chung, the fan, and flaps 57 & 58 of Kopko would be placed in respective locations (i.e. the area of fan 6A and directly upstream of evaporator 4 where ports 9 and 9A join of Chung) in Chung. Reed teaches a vane assembly (referring to figure 1) that includes a plurality of vanes (11) disposed downstream of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a

predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the flaps of Kopko as modified by Kim and Chung to include the vane assembly as taught by Reed in order to provide increased directing of airflow, thus reducing air turbulence within the duct.

Regarding claims 4-6, Kopko as modified by Kim, Chung and Reed teach all the limitations as described above, and as explained above in the rejection of claim 1, Reed teaches a vane assembly (referring to figure 1) that includes a plurality of vanes (11) disposed downstream of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65).

Regarding claim 8, Kopko as modified by Kim and Chung teach all the limitations as described above, but fail to explicitly teach that the defrost heater is positioned between the fan and the evaporator. Although Kim is deficient in disposing the defrost heater between the evaporator and the fan, at the time the invention was made, it would have been an obvious matter of design choice to a person having ordinary skill in the art to dispose the defrost heater between the evaporator and the fan, because the Applicant has not disclosed that disposing the defrost heater between the evaporator and the fan provides a particular advantage, is used for a particular purpose, or solves a stated problem. One having ordinary skill in the art, furthermore, would have expected Kim's defrost heater disposition, and Applicant's invention to perform equally

well with either the defrost heater disposition as taught by Kim and defrost heater being disposed between the fan and evaporator because both defrost heater dispositions would perform the same function of heating the evaporator during defrost operation. Therefore, it would have been a prima facie case of obviousness to modify Kim to obtain the invention as specified in claim 8 because such a modification would have been considered a mere design choice which fails to patentably distinguish over the prior art of Kim. Furthermore, one of ordinary skill in the art would have been motivated to dispose the defrost heater between the evaporator and the fan in order to provide a more compact arrangement within the duct, thus providing more space for additional items.

4. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Chung and Reed as applied to claim 1 above, and further in view of Block (US 2002/0192075).

Regarding claim 9, Kopko as modified by Kim, Chung and Reed teach all the limitations as described above, but fail to teach that the defrost heater is fabricated as one unit with the fan. Block teaches the well known concept of providing a heating element on a fan for delivering hot fluid (see figure 1 and paragraph 21). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the reversing fan of Kopko as modified by Kim, Chung and Reed to include the heating elements as taught by Block in order to provide more warm air to be blown to the evaporator for defrosting purposes, thus reducing the amount of heat needed to melt the frost.

5. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Chung and Reed as applied to claim 1 is above, and further in view of Carlstedt et al. (Carlstedt, US 5,765,384).

Regarding claim 10, Kopko as modified by Kim, Chung and Reed teach all the limitations as described above, but fail to teach a hot wire that functions as a resistance body connected to a power source for emission of heat; and a film of an electrical insulating material surrounding the hot wire. Carlstedt et al. teach the concept of providing an evaporator (10) having an electric cable (20) for defrosting the evaporator (see abstract); wherein electric current is conducted through a resistance wire (24; see column 2, lines 3-5), having a thin film (insulation 26) surrounding the resistance wire (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko as modified by Kim, Chung and Reed to include the defrost heater as taught by Carlstedt order to prevent ice buildup on the evaporator from clogging the cold air duct, thus increasing cooling efficiency.

6. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Chung and Reed as applied to claim 1 is above, and further in view of Schenk et al. (Schenk, US 6,694,754).

Regarding claim 11, Kopko as modified by Kim, Chung and Reed teach all the limitations as described above, but fail to disclose a plurality of fins in contact with the refrigerant pipe. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe (illustrated in figure 1). It would have been

obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim, Chung and Reed to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko in view of Kim, Schenk and Chung.

Regarding claim 12, Kopko discloses a refrigerator arrangement (referring to figure 2) comprising: a duct (59) in fluid communication with a freezer compartment (55) and a fresh-food compartment (56) via flaps (53, 54, 57, and 58) disposed adjacent to both of said compartments (illustrated in figure 2); wherein the duct includes an evaporator/refrigerant pipe assembly (52) and a motor driven reversing fan (51) capable of moving air in two directions, thus opening a first set of flaps (53 and 54) when the fan moves air in one direction and closing the first set of flaps when the fan moves air in another direction opposite the first direction (see column 4, lines 23-40; the fan blows air to the right and to the left, depending on the direction of rotation of the fan). Also, Kopko further discloses that if the fan blows air away from the evaporator, flaps 53 of the freezer compartment will close off the freezer compartment to the space, and the space will be closed off to the freezer compartment (see column 4, lines 23-40). It is noted that the operation of the reversing fan is indicative that some type of driving means (i.e. a motor) controls the rotation of the fan. Also, it is noted that the recitations "so that the opening or closing between the space and the refrigerating chamber and the space and the freezing chamber are performed by the open/close device," "so that the cold air is directed into the refrigerating

chamber and /or the freezing chamber during cooling," and "so that a heat transmission from the defrosting heater to the refrigerating chamber and/or freezing chamber is prevented during defrosting by an operation of the defrosting heater" are merely statements of intended use and lends no additional structure to the claimed invention, and the applicant is reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here. However, Kopko fail to disclose a defrost heater positioned within the duct; that both the first and second open/close devices open the space to both the refrigerator and freezer compartment when the fan rotates in one direction and both the first and second open/close devices closes the space when the fan is rotated in the opposite direction; and a supporting plate having a plurality of openings, a plurality of rotating plates, each having one side coupled to the supporting plate by hinges, and the other side being rotatable upward by a predetermined angle, wherein each of the plurality of rotating plates is independently coupled to the supporting plate without a connection to others of the plurality of rotating plates. Kim teaches a refrigerator (referring to figure 3) that includes an evaporator (11), a fan (15), and a defrost heater (17) disposed within a duct (illustrated in figure 3), wherein the defrost heater is selectively operated in a defrost operation (see column 1, lines 55-58). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the refrigerator of Kopko to include the defrost heater as taught by Kim in order to prevent excess frost buildup on the evaporator, thus preventing the reduction in cooling efficiency due to the frost buildup. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe

(illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency. Schenk teaches a refrigerator (referring to figure 1) that includes an evaporator (30) having fins disposed around the refrigerant pipe (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim to include the fins as taught by Schenk in order to increase heat transfer between the refrigerant and the air passing through the evaporator, thus increasing cooling efficiency. . The general concept of designing a refrigerator to have a freezer compartment disposed above a refrigerator compartment and having airflow that flows from a space to both the refrigerator compartment and freezer compartment in series falls within the realm of common knowledge as obvious mechanical expedient and is illustrated by Chung which teaches a refrigerator (referring to figure 1) having a freezer compartment (2) disposed above a refrigerator compartment (3) and having airflow (see arrows) that flows from a space (5) to both the refrigerator compartment and freezer compartment in series (illustrated in figure 1: via port 7), and one having ordinary skill in the art would have been motivated to include the use of a refrigerator of this configuration in order to make the refrigerator portable and fit in confined spaces. Conceptually, is noted that given the refrigerator arrangement of Chung, the fan, and flaps 57 & 58 of Kopko would be placed in respective locations (i.e. the area of fan 6A and directly upstream of evaporator 4 where ports 9 and 9A join of Chung) in Chung. Reed teaches a vane assembly (referring to figure 1) that includes a plurality of vanes (11) disposed downstream

of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the flaps of Kopko as modified by Kim, Schenk and Chung to include the vane assembly as taught by Reed in order to provide increased directing of airflow, thus reducing air turbulence within the duct.

8. Claims 13 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Reed as applied to claim 12 above, and further in view of Carlstedt.

Regarding claims 13 and 20, Kopko as modified by Kim, Schenk, Chung and Reed teach all the limitations as described above, but fail to teach a hot wire that functions as a resistance body connected to a power source for emission of heat; a film of an electrical insulating material surrounding the hot wire; and wherein at least a portion of the plurality of fins have insertion slots in side surfaces configured to receive the defrost heater. Carlstedt et al. teach the concept of providing an evaporator (10) having a tubular element (12) disposed within fins (14) of the evaporator (10); wherein the tubular element includes a bent electric cable (20) for defrosting an evaporator (see abstract); wherein electric current is conducted through a resistance wire (24; see column 2, lines 3-5), having a thin film (insulation 26) surrounding the resistance wire (illustrated in figure 1). It would have been obvious to one having ordinary skill in the art at the

time the invention was made to have modified the refrigerator of Kopko as modified by Kim, Schenk, Chung and Reed to include the defrosting arrangement as taught by Carlstedt order to prevent ice buildup on the evaporator from clogging the cold air duct, thus increasing cooling efficiency.

9. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt as applied to claim 13 above, and further in view of Lindseth (US 2,000,467).

Regarding claim 14, Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt teach all the limitations as described above, but fail to teach that the hot wire is a carbon hot wire. Lindseth teaches the well known concept of a heating element being made of carbon (see column 2, lines 35-38). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the hot wire of Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt to include the carbon as taught by Lindseth in order to reduce the noise generated by the power source and to withstand higher tolerances, thus increasing heating efficiency.

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt as applied to claim 13 above, and further in view of Komatsu (US 5,594,585).

Regarding claims 15 and 16, Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt teach all of the limitations of the claimed invention, but fail to teach that the film is

formed of PET material and wherein the defrosting heater is a PTC device. Komatsu teaches the concept of using a positive temperature coefficient thermistor (PTC) heater as a heating device (column 3, lines 41-46) and laminating the PTC heater with a PET film (column 3, lines 46-49). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the film of Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt to be made of the PET material as taught by Komatsu in order to prevent the while of the cold air duct from being heated, thus increasing cooling efficiency. Furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the defrost heater of Kopko as modified by Kim, Schenk, Chung, Reed and Carlstedt with the PTC device as taught by Komatsu in order to regulate the defrost temperature without a temperature control circuit, thus increasing efficiency.

11. Claims 17 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Reed as applied to claim 12 above, and further in view of Kobayashi et al. (Kobayashi, US 4,369,350).

Regarding claims 17 and 18, Kopko as modified by Kim, Schenk, Chung and Reed teach all the limitations as described above, but fail to explicitly teach that the defrost heater is attached to at least one side of the plurality of fins. Kobayashi teaches an evaporator for a refrigerating device (referring to figures 7-9) that includes refrigerant tubing (9), a plurality of fins (8), wherein a heater (10) is attached to the fins (illustrated in figure 9) for defrosting purposes (see column 3, lines 50-61). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified

by Kim, Schenk, Chung and Reed to provide a defrost heater that is attached to a surface of the fins as taught by Kobayashi in order to provide quicker heating of the evaporator to melt the frost, thus preventing degradation of cooling efficiency.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Reed as applied to claim 12 above, and further in view of Seipp et al. (Seipp, US 4,369,350).

Regarding claim 19, Kopko as modified by Kim, Schenk, Chung and Reed teach all the limitations as described above, but fail to teach that the defrost heater has pass through holes for the at least one refrigerant pipe. Seipp et al. teaches a heat exchanger defrost apparatus [see figure 3] that includes a defrost heater (20) thermally connected to a plate (15), wherein the plate has perforations (25) for the heat exchanger tubes to pass therethrough [see column 2, lines 33-36]. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the evaporator of Kopko as modified by Kim, Schenk, Chung and Reed to include the defrost heater arrangement as taught by Seipp in order to provide quicker heating of the evaporator to melt the frost, thus preventing degradation of cooling efficiency.

13. Claims 24-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kopko as modified by Kim, Schenk, Chung and Reed as applied to claim 12 above, and further in view of Reed (US 2,191,774).

Regarding claims 24-25, Kopko as modified by Kim, Schenk, Chung and Reed teach all the limitations as described above, but fail to teach a plurality of thin rotating plates each having

one side coupled to the supporting plate by a hinge, and the other side rotatable upward by a predetermined angle to open the openings; and wherein the rotating plate covers an upper circumference of the respective opening to close the opening. Reed teaches a vane assembly (referring to figure 1) that includes a plurality of vanes (11) disposed downstream of a vent (1) and connected to a tie rod (14) via an axis (12) and a lever (13); wherein openings between the vanes are created when a predetermined amount of air is sucked through the vanes (illustrated in figure 1 and see column 2, lines 37-55), and when the vanes are closed, a portion of the vanes can lie onto an adjacent vane (see column 3, lines 51-65). It would have been obvious to one having ordinary skill in the art at the time the invention was made to have replaced the flaps of Kopko as modified by Kim, Schenk, Chung and Reed to include the vane assembly as taught by Reed in order to provide increased directing of airflow, thus reducing air turbulence within the duct.

Response to Arguments

14. Applicant's arguments filed 12/23/2010 have been fully considered but they are not persuasive. In the following arguments in the applicant's remarks, is noted that the applicant has not presented reasons why the prior art alone or in combination fails to teach the claimed limitations.

On page 11, the applicant argues that "Kopko, Kim, and Chung, taken alone or in combination, fail to disclose or suggest such features, or the claimed combination of independent claim 1." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 1 above.

On pages 11-12, in regard to the rejection of claims 4-6, the applicant argues that "Reed fails to overcome the deficiencies of Kopko, Kim, and Chung as it is merely cited for allegedly teaching a plurality of thin rotating plates each having one side coupled to the supporting plate by a hinge, and the other side rotatable upward by a predetermined angle to open the openings; wherein the rotating plate covers an upper circumference of the respective opening to cover the opening; and wherein the rotating plate is held by a rear end of an adjacent rotating plate and the supporting plate to prevent the plate from rotating downward." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 1 above.

On page 12, in regard to the rejection of claim 9, the applicant argues that "Block fails to overcome the deficiencies of Kopko, Kim, and Chung, as it is merely cited for allegedly teaching a defrost heater fabricated as one unit with a fan." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 1 above.

On page 13, in regard to the rejection of claim 10, the applicant argues that "Carlstedt fails to overcome the deficiencies of Kopko, Kim, and Chung as it is merely cited for allegedly teaching a hot wire that functions as a resistance body connected to a power source for emission of heat, and a fl1m of an electrical insulating material surrounding the hot wire." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 1 above.

On page 13, in regard to the rejection of claim 11, the applicant argues that " Schenk fails to overcome the deficiencies of Kopko, Kim, and Chung, as it is merely cited for allegedly teaching a plurality of fins in contact with a refrigerant pipe." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 14, the applicant argues that "Kopko, Kim, Schenk, and Chung, taken alone or in combination, fail to disclose or suggest such features, or the claimed combination of independent claim 12." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 15, in regard to the rejection of claims 13 and 20, the applicant argues that "Carlstedt fails to overcome the deficiencies of Kopko, Kim, Schenk, and Chung, as it is merely cited for allegedly teaching a hot wire that functions as a resistance body connected to a power source for emission of heat; a film of an electrical insulating material surrounding the hot 'Wire; and wherein at least a portion of the plurality of fins have insertion slots in side surfaces configured to receive the defrost heater." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 15, in regard to the rejection of claim 14, the applicant argues that "Lindseth fails to overcome the deficiencies of Kopko, Kim, Schenk, Chung, and Carlstedt, as it is merely cited for allegedly teaching that the hot wire is a carbon hot wire." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claims 12 & 13 above.

On page 16, in regard to the rejection of claims 15 and 16, the applicant argues that "Komatsu fails to overcome the deficiencies of Kopko, Kim, Schenk, Chung, and/or Carlstedt, as it is merely cited for allegedly teaching a film formed of PET material, and wherein the defrosting heater is a PTC device." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 16, in regard to the rejection of claims 17 and 18, the applicant argues that "Kobayashi fails to overcome the deficiencies of Kopko, Kim, Schenk, and Chung, as it is merely

cited for allegedly teaching a defrost heater attached to at least one side of a plurality of fins." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 17, in regard to the rejection of claim 19, the applicant argues that "features. Seipp fails to overcome the deficiencies of Kopko, Kim, Schenk, and Chung, as it is merely cited for allegedly teaching a defrost heater having pass through holes for the at least one refrigerant pipe.." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

On page 17, in regard to the rejection of claims 24-25, the applicant argues that "features. Reed fails to overcome the deficiencies of Kopko, Kim, Schenk, and/or Carlstedt, as it is merely cited for allegedly teaching a plurality of thin rotating plates each having one side coupled to the supporting plate by a hinge, and the other side rotatable upward by a predetermined angle to open the openings; and wherein the rotating plate covers an upper circumference of the respective opening to close the opening." The Examiner respectfully disagrees. The applicant is urged to see the rejection of claim 12 above.

In conclusion, for at least these reasons, the Examiner respectfully submits that the rejections of the pending claims are properly upheld.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to AZIM RAHIM whose telephone number is (571) 270-1998. The examiner can normally be reached on Monday - Thursday 7am - 2pm EST and Friday 7am - 11am EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frantz Jules can be reached on 571-272-6681. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/A. R./
Examiner, Art Unit 3744
1/28/2011

/Frantz F. Jules/
Supervisory Patent Examiner, Art Unit 3744